LASER ASSISTED MATERIAL DEPOSITION

ABSTRACT

Apparatus is provided for a method of forming a film on a substrate that includes activating a gas precursor to deposit a material on the substrate by irradiating the gas precursor with electromagnetic energy at a frequency tuned to an absorption frequency of the gas precursor. The electromagnetic energy can be provided by an array of lasers. The frequency of the laser beam is selected by switching from one laser in the array to another laser in the array. The laser array may include laser diodes, one or more tunable lasers, solid state lasers, or gas lasers. The frequency of the electromagnetic energy is selected to impart specific amounts of energy to a gas precursor at a specific frequency that provides point of use activation of the gas precursor.

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